SECTION 1 - PRODUCT AND COMPANY INFORMATION

PRODUCT IDENTIFIER Cellulose Insulation

PRODUCT NAME
Cocoon™ Insulation

MANUFACTURER

GreenFiber
809 West Hill Street
Charlotte, NC 28208-9924 USA

Emergency Telephone Number: 800-666-4824
8 AM - 5 PM EST Monday-Friday

SECTION 2 - COMPOSITION AND INGREDIENT INFORMATION

COMPONENT AND CAS NO.	PERCENT BY WEIGHT	EXPOSURE LIMITS	CANCER DESIGNATION
Cellulose Insulation #65996-61-4	Not less than 88%	PEL-TWA=15mg/m³ total dust (PNOC) PEL-TWA=5mg/m³, respirable fraction TLV-TWA=10mg/m³, inhalable,, no asbestos and quartz < 1% (PNOC) TLV-TWA=3mg/ m³, respirable, no asbestos and quartz < 1% (PNOC)	None
Boric Acid H_3BO_3 #10043-35-3	Not more than 10%	Same	None
Ammonium Sulfate $(NH_4)_2SO_4$ #7783-20-2	Not more than 11%	Same	None
Guar Gum or Wheat Starch #9005-25-8	Not more than 3%	Same	None
Mono-Ammonium Phosphate $NH_4H_2PO_4$ #7722-76-1	Not more than 2%	Same	None
Zinc Oxide ZnO #1314-13-2	Not more than 2%	Same	None

Boric Acid is classified as hazardous under the OSHA Hazard Communication Standard based on animal chronic toxicity studies. Refer to Sections 3 and 11 for details on hazards. **Cocoon™ Insulation is not considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.**

HMIS Rating		National Fire Protection Association (NFPA)	
Health	1	Red (Flammability)	0
Flammability	1	Yellow (Reactivity)	0
Reactivity	0	Blue (Acute Health)	1*
Personal Protection	E	*Chronic Effects	

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Avoid extreme heat and open flame. May emit carbon monoxide gas and boric acid and other hazardous particulates during thermal decomposition. Cocoon™ Insulation is a finely divided, light gray material with no perceptible odor. It presents no unusual hazard if involved in a fire

Physical Characteristics		Potential Health Effects	
Boiling Point (F)	Not Applicable	Inhalation	Slightly irritating to upper respiratory system Persons with respiratory problems should avoid breathing dust.
Vapor Pressure (mm Hg)	Not Applicable	Eyes	Slight irritant. In case of eye contact, flush with water
Vapor Density	Not Applicable	Ingestion	Small amounts are not likely to cause harm Ingestion of large amounts may cause rash, diarrhea, nausea.
Solubility in Water	Insoluble; Dispersible	Skin	Does not normally irritate skin. In case of broken skin, wear gloves and wash dust from skin with soap and plenty of water Large amounts absorbed into bloodstream may cause rash, skin peeling, diarrhea, nausea, dizziness.
Specific Gravity (H_2O=1)	Not Applicable	Acute	None
Reactivity in Water	None	Chronic	None
Melting Point	Not Applicable	Cancer	Neither the end product nor any of its component ingredients are considered carcinogenic

SECTION 4 - FIRST AID

Eyes	For dust exposure, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
Skin	If broken skin is exposed, wash with soap and large amounts of water. If irritation persists, seek medical attention.
Inhalation	If irritation or difficulty in breathing occurs, remove to fresh air. Seek medical attention if the condition persists.
Ingestion	Symptoms may include diarrhea, nausea, and vomiting. Seek medical attention if material was ingested and symptoms occur.
Note to Physicians	Exposure to dust may aggravate symptoms of persons with pre-existing respiratory tract conditions and may cause skin and gastrointestinal symptoms.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point (Method Used): Not Applicable
Combustible: Material may decompose on contact with extreme temperatures and open flames
Flammable Limits: LEL: Not Applicable UEL: Not Applicable
Auto-Ignition Temperature Not Determined.
Explosion Hazard: None expected for Cocoon based on particle size. Note: Airborne concentrations of combustible dust, when combined with an ignition source, can create an explosion hazard if the dust concentration exceeds 15 gm/m^3.
Extinguishing Media: Water, dry chemical and other agents rated for a wood fire (Type A fire). Use Type A rated extinguisher.
Fire Fighting Instructions: Evacuate the area and notify the fire department. If possible, isolate the fire by moving other combustible materials. If the fire is small, use a hose-line or extinguisher rated for a Type A fire. If possible, dike and collect water used to fight fires. Fire-fighters should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Contains water-soluble inorganic mineral salts which may damage trees or vegetation exposed to large quantities.
Land: shovel, sweep or vacuum product. Place in disposal container. Avoid bodies of water.
Water: large quantities may cause localized contamination of surrounding waters depending on the quantity spilled. At high concentrations may damage localized vegetation, fish, and other aquatic life.
Cocoon™ Insulation is a non-hazardous waste when spilled or disposed of as defined in the Resource Conservation and Recovery Act (RCRA) regulations (40 CFR 261). Refer to regulatory information in Section 15 for additional information regarding EPA and California regulations.

SECTION 7 - HANDLING AND STORAGE

General	No special handling is required. Storage of sealed bags in a dry indoor location is recommended. To maintain product integrity, handle on a "first in-first out" basis. Use good housekeeping and engineering controls so that dust levels are below the exposure limits listed in Section 2.
Storage Temperature	Ambient
Storage Pressure	Atmospheric
Special Sensitivity	None

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

General Exposure Controls	No specific controls are needed. Use standard good housekeeping practices and engineering controls to minimize nuisance dust levels.
Respiratory Protection	If housekeeping and engineering controls do not maintain nuisance dust levels below regulatory limits or dust concentration is unknown, use a *NIOSH-Approved Air Purifying Respirator.*
Eye Protection	Wear ANSI-approved eye protection if environment is excessively dusty.
Hand Protection	If skin is broken or sensitive, use gloves.
Other Protective Clothing	None.
Ventilation	Normal and adequate ventilation.
Work/Hygienic Practices	Standard hygienic practices
Occupational Exposure Limits	***Cocoon™ Insulation is listed/regulated by OSHA, Cal/OSHA, and ACGIH as "Particulates Not Otherwise Classified" or "Nuisance Dust."***

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Gray, odorless fiber	**Boiling/Melting Point**	Not Applicable
Specific Gravity	0.7 compressed.	**Flash Point**	Not Applicable
Vapor Pressure	Negligible @ 20° C.	**pH**	8.2 (2.0% solution @ 25° C
Solubility in Water	Fiber is not soluble, chemical additive is soluble at the rate of 4.7% @ 20° C	**Viscosity**	Not Applicable

SECTION 10 - STABILITY AND REACTIVITY

Stability: Cocoon™ Insulation is a stable product.
Conditions and Materials to Avoid: Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard. Keep away from strong oxidizers, such as concentrated nitric acid, hydrogen peroxide, and chlorine.
Hazardous Decomposition Products: None.
Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

BORIC ACID

Eye:	None listed, is expected to be an eye irritant
Skin:	Mild irritation based on Standard Draize Test. LDLo, skin, human, 1200 mg/kg.
Ingestion:	LDLo, oral, human, 429 mg/kg. LD50, oral, rat, 2660 mg/kg
Inhalation:	LCLo, inhalation, rat, 28 mg/m^3/4H
Subchronic:	TDLo, oral, rat, 45 gm/kg/90D-C.
Chronic:	TDLo, oral, rat, 244 gm/kg/2Y-C.
Teratology:	none reported.
Reproduction:	TDLo, oral, rat, 6600 mg/kg, specific developmental abnormalities - musculoskeletal system
Mutagenicity:	Mutation in microorganisms, Escherichia Coli, 17000 ppm/24H.

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Eye:	None reported.
Skin:	Mild irritation based on Standard Draize Test
Ingestion:	None reported
Inhalation:	None reported.
Subchronic:	None reported.
Chronic:	None reported
Teratology:	None reported.
Reproduction:	None reported
Mutagenicity:	None reported.

AMMONIUM SULFATE

Eye:	None listed
Skin:	None listed
Ingestion:	TDLo, oral, human, 1500 mg/kg, diarrhea, nausea, vomiting. LD50, oral, rat, 2840 mg/kg
Inhalation:	None reported.
Subchronic:	None reported.
Chronic:	None reported.
Teratology:	None reported.
Reproduction:	None reported.
Mutagenicity:	None reported

MONOAMMONIUM PHOSPHATE

Eye:	Irritation with the extent of damage depending on duration of contact
Skin:	Contact dermatitis may follow repeated skin contact.
Ingestion:	With large doses there is the possibility of diuresis and systemic poisoning
Inhalation:	None reported
Subchronic:	None reported
Chronic:	None reported
Teratology:	None reported.
Reproduction:	None reported.
Mutagenicity:	None reported.

SECTION 12 - ECOLOGICAL INFORMATION

From the Hazardous Substances Data Bank, except RfDs which are from IRIS

BORIC ACID

Ecotoxicity	LC50, Daphnia magna, 133 mg/l/48H. RfD, oral, human, 0 09 mg/kg/day, testicular atrophy, spermatogenic arrest. LC50, Trout, 100 ppm.
Chemical Fate Information	Boron is adsorbed into clay particles, with the maximum adsorption in the pH range of 7-9. The amount of boron adsorbed depends on the surface area of the clay

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Ecotoxicity	Not listed.
Chemical Fate Information	Not listed.

AMMONIUM SULFATE

Ecotoxicity	TLm, Daphnia magna, 423 mg/l/24H
Chemical Fate Information	Not listed

MONOAMMONIUM PHOSPHATE

Ecotoxicity	Not listed.
Chemical Fate Information	Not listed.

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose as a non-hazardous waste.

SECTION 14 - TRANSPORT INFORMATION

May be shipped normally as a non-hazardous material.

SECTION 15 - REGULATORY INFORMATION

Superfund: CERCLA/SARA. Cocoon™ Insulation is not listed under the Comprehensive Environmental Response Compensation and Liability Act(CERCLA) or its 1986 amendments, the Superfund Amendments and Reauthorization Act (SARA). including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65; Section 302 of SARA Extremely Hazardous Substances, 42 USC 11002. 40 CFR 355; or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302.

RCRA: Cocoon™ Insulation is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act or regulations (40 CFR 261 *et seq.*)

Safe Drinking Water Act: Cocoon™ Insulation is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding boron and ammonia.

California Proposition 65: Cocoon™ Insulation is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

OSHA Carcinogen: Not listed.

Clean Water Act (Federal Water Pollution Control Act): 33 USC 1251 et seq.: Cocoon™ Insulation is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314. Cocoon™ Insulation is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 116. Cocoon™ Insulation is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

TSCA No.: Cocoon™ Insulation does not appear on the EPA TSCA inventory list. Ammonium sulfate and boric acid appear on the EPA TSCA inventory list under the CAS Nos. 7783-20-2 and 10043-35-3 respectively.

OSHA/Cal/OSHA: This MSDS document meets the requirements of both OSHA and Cal/OSHA hazard communication standards Refer to Section 8 for regulatory exposure limits.

IARC: The International Agency for Research on Cancer (of the World Health Organization) does not list or categorize Cocoon™ Insulation as a carcinogen.

NTP Annual Report on Carcinogens: Not listed

SECTION 16 - OTHER INFORMATION

INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED DEPENDABLE AND IS ACCURATE AND RELIABLE TO THE BEST OF OUR KNOWLEDGE AND BELIEF, BUT IS NOT GUARANTEED TO BE SO NOTHING HEREIN IS TO BE CONSTRUED AS RECOMMENDING ANY PRACTICE OR ANY PRODUCT IN VIOLATION OF ANY PATENT OR IN VIOLATION OF ANY LAW OR REGULATION. THE USER IS RESPONSIBILE TO DETERMINE THE SUITABILITY OF ANY MATERIAL FOR A SPECIFIC PURPOSE AND ADOPT NECESSARY SAFETY PRECAUTIONS. WE MAKE NO WARRANTY AS TO RESULTS TO BE OBTAINED IN USING ANY MATERIAL AND, SINCE CONDITIONS OR USE ARE NOT UNDER OUR CONTROL, WE MUST NECESSARILY DISCLAIM ALL LIABILITY WITH RESPECT TO USE OF ANY MATERIAL SUPPLIED BY US.

ABBREVIATIONS

CAS	Chemical Abstract Services (identifies specific chemical)	**OSHA**	Occupational Safety and Health Administration
gm/m³	Grams per cubic meter	**PNOC**	Particulates Not Otherwise Classified
LCLo	Lethal concentration low	**PEL**	OSHA Permissible Exposure Limit
LC50	Lethal concentration 50%	**ppm**	Parts per million
LDLo	Lethal dose low	**RfD**	Reference Dose
LD50	Lethal dose 50%	**RTECS**	Registry of Toxic Effects of Chemical Substances
LOAEL	Lowest Observed Adverse Effect Level	**TDLo**	Toxic dose low
mg/l/H	Milligrams per liter per hour	**TLV**	ACGIH Threshold Limit Value
mg/kg	Milligrams per kilogram	**TWA**	8 hour Time Weighted Average exposure
mg/m³	Milligrams per cubic meter		

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